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Description

TUB SKIRT PANEL SYSTEM

Cross Reference to Related Applications

[0001] This application claims the benefit of U.S. provisional patent application number 60/481,622 filed on November 11, 2003 the entirety of which is hereby incorporated by reference.

Background of Invention

[0002] Modern bathroom design favors a look with planer surfaces and configurations which minimize the visibility of unattractive space. Nowhere is this more noticeable than in the design of bathtubs and tub accessories. Traditional tubs had a shape matching their name, showing a curved exterior surface and exposed piping. Modern design provides more boxlike shape which hides piping and unattractive space beneath and around the bottom of the tub. A common way to provide this shape as part of a new tub system or often over the top of an older tub is to install a tub skirt. A tub skirt provides a flat, aesthetically

pleasing front surface.

[0003] A tub skirt, while hiding unattractive space, also prevents access to this space. As a remedy, tub skirts have been provided with access openings. These openings provide access for cleaning or tub repair and to access motors and plumbing on Jacuzzi type tubs. When such activities are not occurring, the openings are covered. Common accessories used to cover these openings are decorative panels. United States Patent 5,940,906 to Halloran discloses a skirt frame with a detachable panel. The panel is held in place with Velcro tabs. United States Patent 5,804,898 to Kapp et al. discloses a skirt frame with a detachable panel. Velcro is used for attachment. United States Patent 5,208,924 to Smith et al. discloses a skirt frame and mechanically attachable panel. These panels are attached by screws with caps.

[0004] Skirts are often provided without panels. In other cases, the panels provided with the skirts are not aesthetically pleasing and retrofitting is desired by the consumer. Common ways to attach aftermarket or retrofit panels in order to match new bathroom colors or the like is with velcro pads because they can be attached with an adhesive. However, velcro tends to lose holding force over time

and cannot be cleaned easily. This lack of holding force is especially noticeable in Jacuzzi type tubs which include motors which vibrate the tub skirt slightly. Panels which are held in place with screws and caps are difficult to remove. Removal is a time consuming process. What is desired is a simple system which remains hidden from view, but can be used repeatedly without a loss in effectiveness.

Summary of Invention

[0005] A system is provided for aesthetically covering access openings in a tub skirt when access to the interior of the skirt is not required. The system includes a bracket affixable to the tub skirt and a panel easily attachable to and detachable from the bracket. The panel, when attached, hides the bracket when viewed from the exterior of the tub skirt. Clips, which may be integrally molded into the panel, are used to attach the panel to the bracket. The system is an improvement over systems using velcro or brackets which are visible when a panel is in place. The system is durable and can be cleaned easily. Additionally, the system does not loosen when the tub skirt is vibrated.

Brief Description of Drawings

[0006] Figure 1 is an exploded view of a system for aesthetically

covering an access opening in a tub skirt;

[0007] Figure 2 is a front elevation view of a bracket within the system of Figure 1;

[0008] Figure 3a is a bottom view of a section of the bracket of Figure 2;

[0009] Figure 3b is a side view of a section of the bracket of Figure 2;

[0010] Figure 3c is a cutaway view of a section of the bracket of Figure 2;

[0011] Figure 4a is a front view of a panel of the system of Figure 1;

[0012] Figure 4b is a side view of the panel of the system of Figure 1;

[0013] Figure 4c is a cutaway view of a section of the panel of the system of Figure 1;

[0014] Figure 5 is a perspective view of the system of Figure 1;

[0015] Figure 6 is a perspective view of a section of an alternate system for aesthetically covering an access opening in a tub skirt;

[0016] Figure 7a is a cut away view of a clip within a system for aesthetically covering an access opening in a tub skirt; and

[0017] Figure 7b is a perspective view of the clip of Figure 7a in a

system for aesthetically covering an access opening in a tub skirt.

Detailed Description

[0018] As described in more detail below and shown in Figures 1 and 5, a system 10 for aesthetically covering access openings 12 in a tub skirt 14 is provided which includes a bracket 24 affixable to the tub skirt 14 and a panel 40 easily attachable to and detachable from the bracket 24. The panel 40 may be provided with aesthetic surface decoration upon its face. When in place and viewed from the exterior of the tub skirt 14, the bracket 24 is hidden from view by the panel 40.

[0019] The system 10 may be a part of or affixed to a tub skirt 14. The skirt 14 may be of a type known in the art, typically having a planer front face which defines one or more access openings 12. The skirt 14 may be used with any type of tub, but in a preferred embodiment of the invention the skirt 14 is used with a bath tub 16. Alternatively the system may be used with cabinets and access passages on walls to access plumbing for example. In yet another embodiment, the system does not cover an opening, but is placed upon a solid surface to match another system which is covering an opening. When used with a tub,

the tub skirt 14 may be integrally formed with a bath tub 16 or may be provided separately. If separately provided, the skirt 14 is easily affixed over the top of the tub 16. The tub skirt 14 functions to provide a simple surface which is easy to clean and hides unattractive space around and beneath the tub 16. This space often has little use and may be distracting to the eye. In other cases, this space holds plumbing or motors which require periodic access. In a preferred embodiment of the invention, the tub skirt 14 has a length which is equivalent to length of the tub 16. However any size tub skirt 14 may be used in order to mesh with the architecture of the room in which the tub 16 is placed. In a preferred embodiment the tub skirt 14 extends from a single side of the tub 16 and hides that face of the tub from view. However, depending upon the way to tub 16 is positioned in a room, the skirt 14 may extend to hide any or all of the remaining three faces of the tub 16 as required by the architecture of the room.

[0020] Referring to Figures 1 and 2 a bracket 24 is shown having a rectangular shape. The bracket 24 may be any shape and may be provided in any number of pieces. Typical shapes include rectangular, square and a simulated tile

shape. The shape of the bracket 24 is typically determined by the shape of the access opening 12 defined by the tub skirt 14. The bracket 24 includes four sides having a rectangular cross section, although any cross sectional shape may be used. The bracket 24 may be formed from plastic in a molding process, typically injection molding. The bracket 24 functions as a support for the panel 40 which covers the access opening 12 in the skirt 14. Preferably the bracket 24 may be affixed to the tub skirt 14 using rivets, but may also be affixed using glue or screws. The bracket 24 defines a plurality of apertures 28 for use in attaching the bracket 24 to the tub skirt 14. Figure 6 shows a typical rivet 60 and apertures 28 within the bracket 24 to allow passage of the rivet 60. The bracket 24 may also be attached using glue or two-sided tape. The bracket 24 provides a support for the panel 40. Referring back to Figure 1, the panel 40 may be easily attached and detached from the bracket 24. The bracket 24 is sized in accordance with the access opening 12 being covered by the panel 40. In a preferred embodiment of the invention the bracket 24 is affixed around the perimeter of the access opening 12. The bracket 24 may be affixed to the front face of the tub skirt 14, but is hidden

from view when the panel 40 is in place.

[0021] The bracket 24 also defines a plurality of fastener mating surfaces 30 as shown in Figures 2, 3a through 3c and 6. Any number of fastener mating surfaces 30 may be placed on any edge of the bracket 24. Figure 2 shows mating surfaces 20 on two sides of the bracket 24 while Figure 6 shows mating surfaces 30 of four sides. A fastener mating surface 30 may have the shape of a tapered channel 34 as shown in Figure 3a. The channel 34 may taper from a wider end at the front of the bracket 24 to a narrower end at the rear of the bracket 24. Thus, as the panel 40 is applied to the bracket 24 the mating surface 30 is easily located at its wide end. As the panel 40 is pushed into a locked position, a clip 50 upon the panel 40 progresses along the channel 34 to the narrower end. The panel 40 becomes aligned as the clip 50 reaches the narrow end. The mating surfaces 30 may be provided in a non-tapered version as well as shown in Figure 6. The mating surface 30 includes a plurality of raised ridges 32. The raised ridges 32 function to engage clips 50 which are on the panel 40, thus holding the panel 40 in place. The raised ridges 32 preferably are molded as part of the bracket 24 upon its formation. The raised ridges 32 are oriented

transversely to the direction of insertion of the panel 40 and its clips 50. As described in more detail below, the raised ridges 32 interact with the clips 50 to hold the panel 40 in place.

[0022] Referring to Figures 1, 4a-4c and 7a-7b a panel 40 is provided which includes a face 42, back 44 and a plurality of clips 50. The face 42 preferably has a shape which is similar to the shape of the access opening 12 in the tub skirt 14, but is sized to cover the opening 12 when in place. The panel 40 may be formed from acrylonitrile-butadiene-styrene (ABS) or AES polymer: The face 42 of the panel 40 may be contoured for decorative purposes. The face 42 may also include raised portions. Extending from the back surface 44 are a plurality of clips 50. The clips 50 include a straight portion 52 which begins at the junction with the panel and extends to an end with an angled portion 54. The angled portion 54 may be any shape which defines a leading interactive surface 56 and trailing interactive surface 58 which mates with the mating surfaces 30 on the bracket 24. The leading interactive surface 56 and trailing interactive surface 58 may be pitched at equal angles but opposite directions with respect to the straight portion 52 to form a V-shape. The clips 50 may

be molded integrally with the remainder of the panel 40 or attached in a separate process as shown in Figures 7a and 7b. The clips 50 are flexible, but resilient. The clips 50 interact with the mating surfaces 30 upon the bracket 24. The panel 40 may include a number of clips 50 which corresponds with the number and placement of mating surfaces 30 on the bracket 24. As the panel 40 is pushed into place the leading interactive surface 56 of the angled portion 54 of the clip 50 will engage the front side of a first raised ridge 32 upon the bracket. As the panel 40 is pushed further towards the bracket 24, the clip 50 flexes and travels over the raised ridge 32 to the ridge"s back side. The panel 40 is now prevented from retraction by the trailing interactive surface 58 if released. As the panel 40 is pushed farther inwards, the clip 50 rides over each successive raised ridge until a desired position is reached. The panel 40 may also be removed easily. The panel 40 is pulled and the trailing interactive surface 58 of the clip 50 rides over successive raised ridges 32 as the resilient clip 50 deflects and returns to position.

[0023] Although the invention has been shown and described with reference to certain preferred and alternate embodiments, the invention is not limited to these specific em-

bodiments. Minor variations and insubstantial differences in the various combinations of materials and methods of application may occur to those of ordinary skill in the art while remaining within the scope of the invention as claimed and equivalents. Use of the term "or"herein is the inclusive, and not the exclusive use.